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ABSTRACT

The school seeks to enable its students to understand and cope with the maladies of the times, to define and clarify the values and principles that should guide action, and to develop personal behavior consistent with these values and principles. These goals can best be attained through systematic instruction in critical thinking, for these skills are as basic to the total functioning of individuals as are reading and writing skills. Very few concrete strategies have been devised which provide opportunities for development of critical thinking skills; there are many classroom situations which could involve more analysis, synthesis, and evaluation of problems and ideas. Critical reading is an important component of this inquiry process. (DS)

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# TEACHING CRITICAL THINKING--
# A MOVE "BACK TO BASICS"

The school seeks to enable its students to understand and cope with the maladies of the times, to define and clarify the values and principles that should guide action, and to develop personal behavior consistent with these values and principles. These goals can best be attained through systematic instruction in critical thinking; for these skills are as basic to the total functioning of individuals as are reading and writing skills.

Jencks (1978), in commenting on the back to basics movement, states that "Where problems appear, they are with more complex skills, with the students' desire or ability to reason, with the lack of interest in ideas, with a shortage of information about the world around them. If schools need to do anything . . . it is to get back to complexity, not to the basics." I submit to you that teaching students to think critically is basic. Students need instruction in inquiring, valuing and decision-making.

Ennis (1962) defined critical thinking as "the determination of the meaning, as well as the acceptability of a statement." The concept has twelve discernible aspects to it:

1. grasping the meaning of a statement
2. judging whether there is ambiguity in a line of reasoning
3. judging whether certain statements contradict each other
4. judging whether a statement is specific enough

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5. judging whether a conclusion follows necessarily
6. judging whether a principle establishes a statement alleged to be an application of it
7. judging whether an inductive conclusion is warranted
8. judging whether an observation statement is reliable
9. judging whether the problem has been identified
10. judging whether something is an assumption
11. judging whether a definition is adequate
12. judging whether a statement made by an alleged authority is reliable.

Critical thinking, then, comprises judgments about problems, terms, issues, arguments, laws, principles, hypotheses, and statements. Even though these aspects are quite often interrelated in practice, together they represent an analysis of the concept of critical thinking. They center on the development of problem-solving skills which are so desperately needed for effective living.

"As we move into the last decades of the twentieth century, our nation is witnessing technological advancements which are unparalleled in human history. At the same time it is faced with social problems of such an immense magnitude that they pose a serious threat to the ideals of American democracy and to man's survival. Ethnic conflict and polarization, environmental pollution, the increasing gap between the haves and have-nots, widespread alienation among our young people, international hostilities, and . . . man's increasing inhumanity to his fellowman are some of the salient problems which America faces as it stands on the threshold of the twenty-first century. No sensitive observer of contemporary American

society can deny the seriousness of our current social problems and the tremendous strains on our social system" (Banks, 1974).

Our main goal in the classroom, then, should be to provide experiences which will prepare students to participate in the shaping of public policy through intelligent social action directed at the solution of these problems. This can be done by encouraging them to acquire knowledge regarding man's struggle for survival throughout the periods of history and to use this knowledge in analyzing and synthesizing current public and personal concerns.

Unfortunately, educators have done little more than give lip service to critical thinking in the classroom. Very few concrete strategies have been devised which provide opportunities for its development. Higher cognitive questioning, however, appears to be one possible concrete way of making good our claims of teaching critical thinking in the schools. Over the years, educators have advocated the effective use of questions as one way to stimulate thinking among students; but little emphasis has been placed on the cognitive level of the questioning.

Sanders (1966) defined questioning as "any intellectual experience calling for a response, including both problems and projects." Higher cognitive questioning includes the processes of analysis, synthesis, and evaluation (Bloom, 1956). It can be used to stimulate the inquiry process and thus promote reflective thinking. This is opposed to lower-level questioning which encourages the mere acquisition of facts. Inherent in the inquiry technique is the use of teacher questions structured to enable students to discover information for themselves rather than to provide

them the information via a lecture. This kind of experience lends itself to critical thinking development. Through higher cognitive questioning, the learner is required to use knowledge in a problem-solving manner rather than merely to regurgitate it.

Practical application of Bloom's higher cognitive processes include:

Analysis--where the one questioned breaks an idea into its component parts for logical analysis: assumptions, facts, opinions, logical conclusions.

Synthesis--where the one questioned suggests answers to a problem which are original, speculative, or creative.

Evaluation--where the one questioned makes a judgment according to explicit criteria, external or internal.

There are many classroom situations which could involve these types of questions. For example, in a discussion of selections from Thoreau's "Walden," the following questions could be asked:

Analysis--"What does Thoreau mean by the statement, 'that a man has to live . . . by dead reckoning'?" "Why, then, must man simplify his life?"

Synthesis--"Formulate some opinion as to Thoreau's regard for the human being."

Evaluation--Which of his criticisms of our national life do you agree or disagree? Why?

When studying a unit on early travel in the United States, students could be given written accounts of travel experiences of individuals through diaries, autobiographies and expositions. From these original

documents, inference-type questions could be asked, such as "What were some of the dangers and discomforts of stage travel?" These are not explicitly stated in the documents but are implied through descriptions of events. An evaluation-type question which could be asked is, "Why did stage travel cease to exist?" To answer this question, students must call upon their knowledge of economic, political and social developments of that time. This is an illustration of the inquiry method of teaching which utilizes questioning techniques. This approach could also be incorporated into an American literature class by starting with a theme or concept such as "Our Changing Democratic Ideals." One problem to explore might be "How might we enhance our understanding of our democratic ideals?" Activities might include listening to a recording of the Declaration of Independence and readings from the texts by such founding fathers as Benjamin Franklin, Thomas Jefferson and Alexander Hamilton to gain perspective of this era in American history. Students should jot down questions which occur to them as they read.

When a discussion ensues, questions raised from the readings which students and teachers raise can be developed in some order of major areas of interest, such as:

1. individual rights and social change
2. the U.S. Constitution--a document for all times
3. education for the masses

A committee for each area can be formed. For further research, books magazines, and resource people can be used. Summary discussions can trace the democratic concept through the years.

In order to successfully pursue the inquiry process of analyzing and evaluating knowledge, students must acquire the ability to read reflectively, that is, to carry on a dialogue through which what is read is probed for its relevance to the issue at hand. This involves critical reading. To read critically is to think critically. It involves the search for relevant materials, the evaluation of the data, the identification and comparison of sources and the synthesis of the findings. Critical reading, then, is "judgment of the veracity, validity, or worth of what is read, based on sound criteria or standards developed through previous experiences" (Robinson, 1967).

Only can students engage in problem-solving activities, except by first learning to read critically. Ultimately, they will become autonomously thinking, socially responsible citizens. Critical reading is based on, or is an instance of, critical thinking. De Baer (1946) recognized three general levels of critical reading. First is the relevancy of materials to a specific question or topic. Second is evaluation of the accuracy of an item of fact or the reliability of a source of information. Third is the ability to appraise the validity of a conclusion reached by an author.

Following are some of its characteristics as expressed by Dale (1965):

1. Critical reading is independent reading. The critical reader is on his own--self-directed, not teacher-directed. He is becoming an independent learner, one who has learned how to learn, and loves learning.

2. Critical reading is problem centered. One of the key tasks of critical reading is to find and state the problem, the key issues. Disciplined study will enable students to discover and clearly state what is at issue.
3. Critical reading is analytical and judgmental. Students must learn to probe hidden assumptions, to evaluate the logic or illogic of the writer. Without critical analysis, they are likely to treat symptoms, not causes.
4. Critical reading is an involving, participatory experience. The critical reader has a dialogue with the author. He asks questions and evaluates the answers.
5. Critical reading requires a sensitivity to words and the acquisition of an excellent vocabulary. Meager vocabularies betray the failure to read widely and critically.
6. Critical reading requires reading to remember. Students won't do much critical reading unless they are provided opportunities to discuss what they have read, noting their doubts and possible disagreements with the author. Critical reading is disciplined reading, by persons who have convictions about something.

Some specific suggestions for teaching critical reading through inquiry in the content areas follow:

1. Use textbooks, tradebooks, and other materials on social studies topics to establish the author's qualifications and note discrepancies among several sources.
2. Have students compare biographies and biographical fiction about one figure, to judge the truth and bias of different accounts of the same person's life.

3. Work on propaganda analysis, reading editorials, and interpreting cartoons, using newspapers and magazines.
4. Teach students to hypothesize. They must be taught to make logical guesses on the basis of what they read, using evidence, experience, and knowledge.
5. Help students learn to look for the presence or absence of logic in writings.
6. Filmstrips produced from different points of view can be used to teach critical thinking. Also, contrasting newspapers and magazines can be used to work on emotional language, slanting news, logic, and treatment of various subjects (Clary, 1977).

The relationship between critical reading and critical thinking is strong. They are manifestations of the same mental processes. Approximately seventy percent of what we learn is obtained through visual means. Therefore, reading is a major force for obtaining the information upon which critical thinking can be based. Reading provides a source for ideas and triggers reaction to ideas. These are the essence of critical thinking.

Critical thinking depends less upon specific techniques and more upon attitude and experience. The greatest responsibility the teacher has is to provide a rich environment for students to develop an inquiring attitude about topics which affect their lives. This is done best by questioning and inquiry techniques which stimulate their searching, analyzing and evaluating abilities. Basic skills such as spelling, punctuation and grammar are essential tools, but they are only tools to be taught in the context of their usefulness to students in their search for knowledge. They should serve as means toward an end. These skills are needed to help students grapple with ideas so that they

critical thinking

may make rational judgments about important issues and communicate these judgments effectively. ~~These skills~~ should serve as a means toward an ~~end~~. ~~However,~~ teaching critical thinking skills is basic to our responsibility to produce literate, productive individuals as evidence of our accountability to our nation and to ourselves.

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